

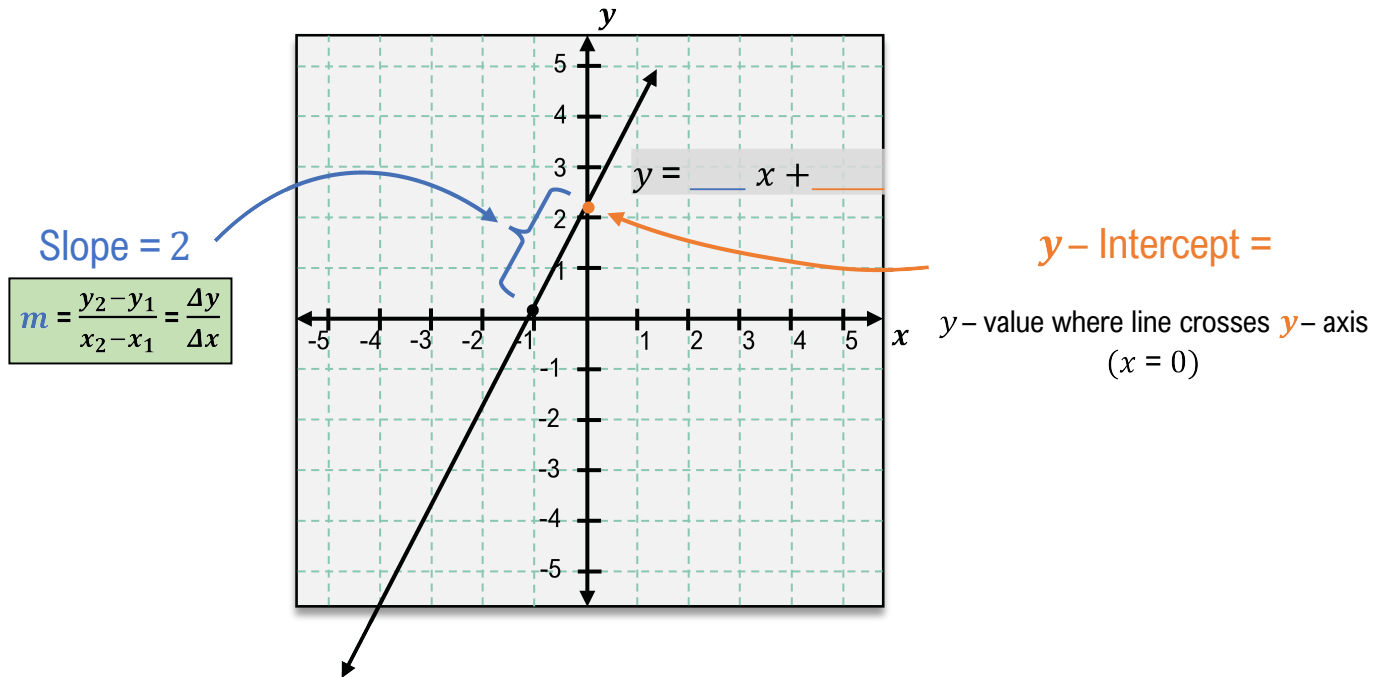
TOPIC: SLOPE INTERCEPT FORM

Slope Intercept Form

◆ We can rewrite the equation of a line using its _____ & _____.

$$y = \underline{\hspace{1cm}}x + \underline{\hspace{1cm}}$$

(Slope - Intercept Form)

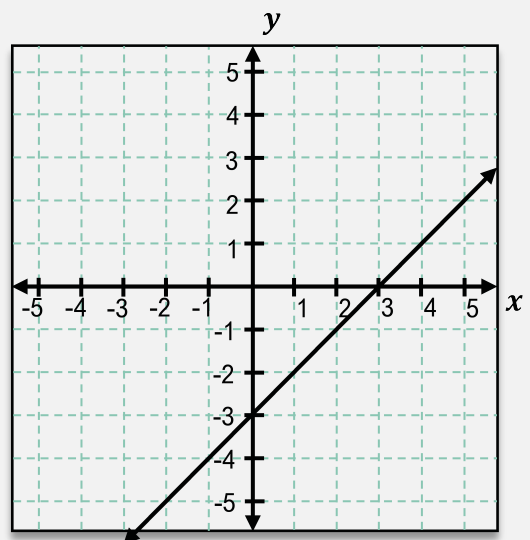


EXAMPLE: In the graph below, identify the y - intercept & slope.

Write the equation in slope-intercept form.

$$b = \underline{\hspace{2cm}}$$

$$m = \underline{\hspace{2cm}}$$

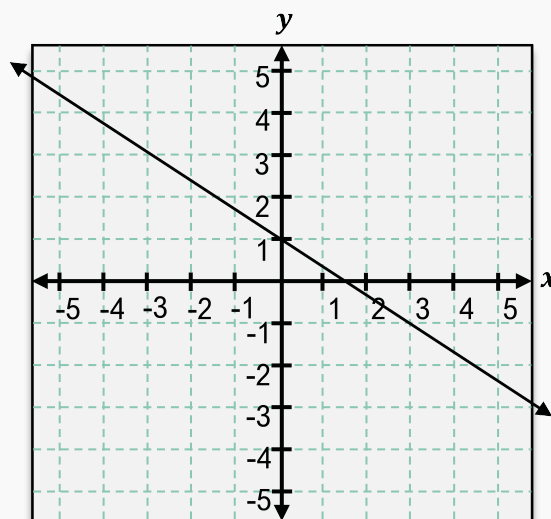


TOPIC: SLOPE INTERCEPT FORM

PRACTICE

In the graph shown, identify the y -intercept & slope. Write the equation of this line in Slope-Intercept form.

$$y = mx + b$$



TOPIC: SLOPE INTERCEPT FORM

PRACTICE

Determine the equation of a line given its slope and y -intercept. Write in slope-intercept form.

(A)

Slope = 4

y -intercept = -2

(B)

Slope = -3

y -intercept = $\frac{5}{2}$

EXAMPLE

Identify the slope of the line given by each equation.

(A)

$y = -3$

(B)

$x = 5$

TOPIC: SLOPE INTERCEPT FORM

Graphing Lines from Equations in Slope Intercept Form

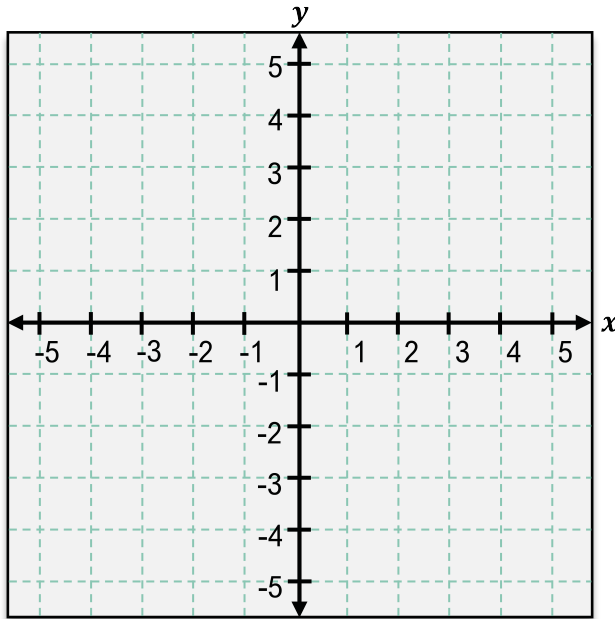
♦ A line equation in slope-intercept form tells you everything you need to graph it!

$$y = mx + b$$

EXAMPLE: Identify the **y – intercept** & **slope** of $y = \frac{2}{3}x + 1$, then graph the equation.

b = _____

m = _____

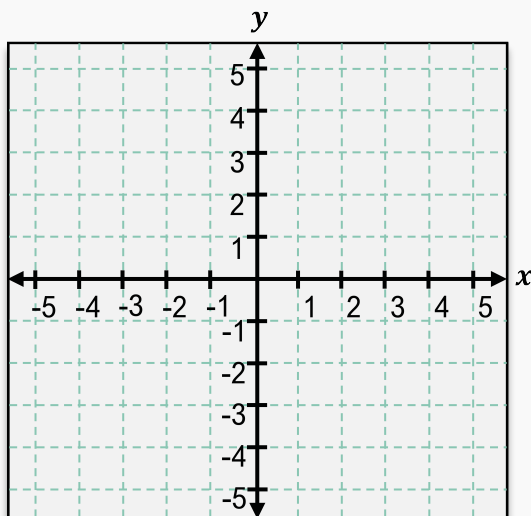


Graphing Lines in Slope-Intercept Form

- 1) Plot **y – intercept** $(0, b)$
- 2) Plot ONE more point using **slope** $\left(\frac{\text{rise}}{\text{run}}\right)$:
- 3) Connect points with a line

PRACTICE

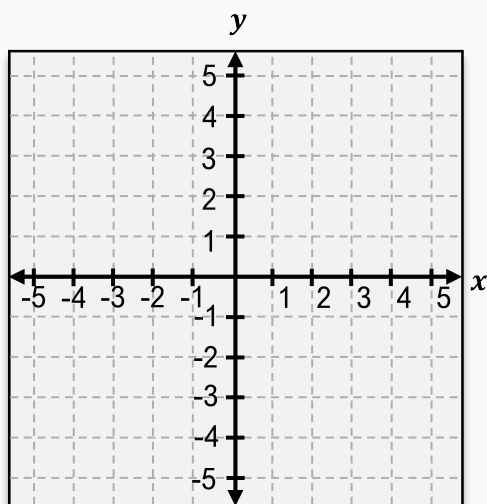
Identify the **y – intercept** & **slope** of $y = -2x - 3$. Then graph the equation.



TOPIC: SLOPE INTERCEPT FORM

PRACTICE

Graph the line represented by the equation $y = -\frac{4}{5}x + 2$



EXAMPLE

A ride-share company models a driver's weekly earnings with the equation $y = 18.50x - 72.50$ where y is the net weekly profit in dollars and x is the number of rides given.

(A) Find the driver's profit for a week when no rides are given.

(B) Find the profit for a week when 15 rides are given.

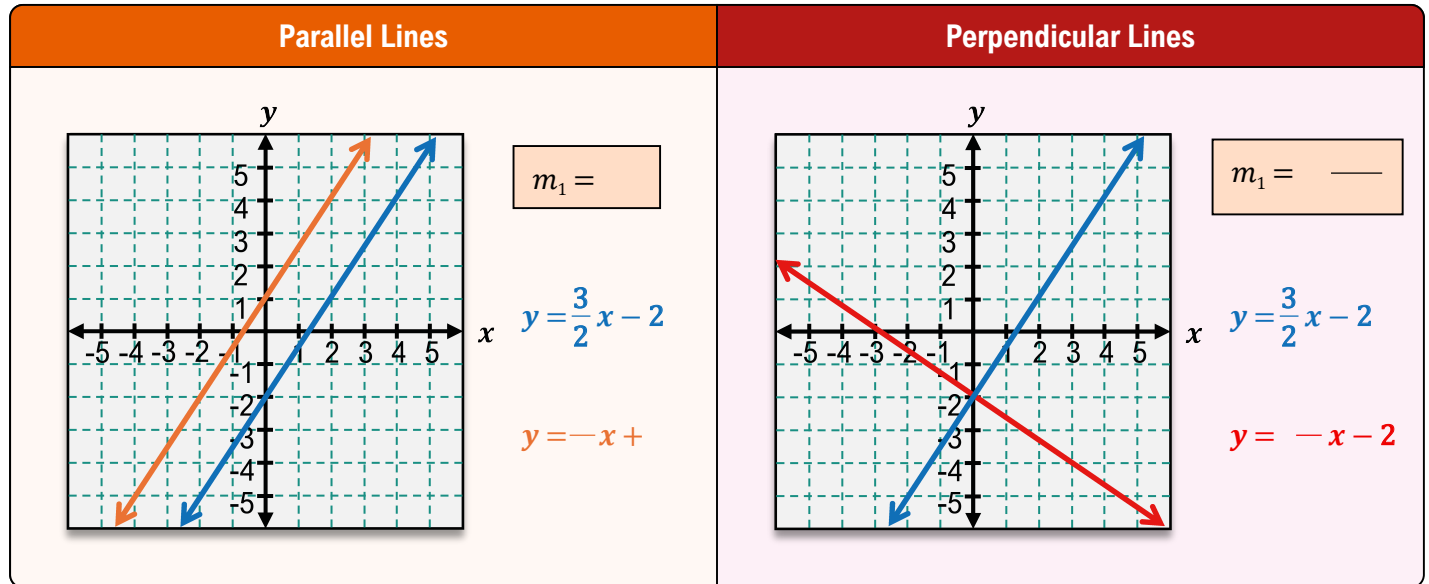
(C) Interpret the slope and the y -intercept of the equation.

TOPIC: SLOPE INTERCEPT FORM

Parallel and Perpendicular Lines

◆ **Parallel lines** _____ intersect each other. Their slopes are *always* the _____, but y-intercepts are different.

► **Perpendicular lines** *always* intersect at a _____ angle. Their slopes are negative _____ of each other.



EXAMPLE

Determine whether the pair of lines is parallel, perpendicular, or neither.

$$y = \frac{1}{3}x + 4$$

$$6x + 2y = 12$$

[PARALLEL | PERPENDICULAR | NEITHER]

TOPIC: SLOPE INTERCEPT FORM

EXAMPLE

Identify whether each pair of equations in parallel, perpendicular, or neither.

(A) $y = 2x$; $y = 2x - 11$ [PARALLEL | PERPENDICULAR | NEITHER]

(B) $y = \frac{1}{3}x + 4$; $y = -3x - 7$ [PARALLEL | PERPENDICULAR | NEITHER]

(C) $y = 5x + 2$; $y = -5x + 27$ [PARALLEL | PERPENDICULAR | NEITHER]

PRACTICE

Find the slope of the line parallel to $y = 5x + \frac{22}{7}$

PRACTICE

Find the slope of the line perpendicular to $4x - 5y = \frac{9}{2}$